

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: BERNARD JOHN COOPER, KEVIN MICHAEL COOPER, BRENDAN GERARD COOPER,
AND JOHN JOSEPH COOPER

For: TREATMENT OF SMELTING BY-PRODUCTS

Serial No.: 10/531,835

Filed: April 18, 2005

Docket No.: 70403-0021

Confirmation No: 3756

Examiner: Weiping Zhu

Group Art Unit: 1793

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))	
I hereby certify that this correspondence is, on the date shown below, being transmitted via EFS Web filing to the United States Patent & Trademark Office.	
<u>/Andrea R. Jacobson/</u>	Date: <u>April 32009</u>
Signature	
<u>Andrea R. Jacobson</u>	
<i>(type or print name of person certifying)</i>	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

PETITION FROM REQUIREMENT FOR RESTRICTION

This is a petition under 37 CFR § 1.181 to invoke the supervisory authority of the Director of the U.S. Patent and Trademark Office to review a restriction requirement. The Commissioner is hereby authorized to charge any required fees to Deposit Account No. 50-2003, but because the necessity of the petition is solely caused by an error of the Examiner, Applicants respectfully request a refund of any charged petition fee.

FACTS

This application is a U.S. national phase patent application submitted pursuant to 35 U.S.C. 371 which claims priority on International Application No. PCT/AU2003/001390, filed October 20, 2003. The application was filed with independent claim 1 and dependent claims 2-10.

On February 21, 2008, a Non-Final Rejection was issued by the Examiner. Included in the action was a restriction requirement. The Examiner required restriction between the following inventions:

- I. Claims 1-7, drawn to a method of treating a spent potliner after use in an aluminum smelting process.
- II. Claim 8, drawn to a plant for processing spent potliners.
- III. Claims 9 and 10, drawn to mineral products.

The Examiner asserted that the “inventions listed as I-II-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features ...” and that “unity of invention is lacking and restriction is appropriate.” *See, Office Action mailed February 21, 2008, page 2.*

On May 20, 2008, Applicants filed a response to the action, provisionally electing invention I, and traversing the Examiner’s requirement for restriction.

On July 24, 2008, a Final Rejection was issued making the restriction requirement final.

On November 24, 2008, Applicants filed a Submission Pursuant to 37 C.F.R. 1.114(c) in Support of Request for Continued Examination. In that Submission, Applicants noted the impropriety of the restriction requirement and requested reconsideration.

On January 13, 2009, a Non-Final Rejection was issued. In this action, the Examiner advised Applicants to “file a petition directly to the Office of the TC 1700 director of the USPTO in order to revert the restriction requirement.” *See, Office Action mailed January 13, 2009, page 2, para. 2.*

ARGUMENT

The Examiner asserts that the three groups of claims form three distinct inventions which are not linked as to form a single general inventive concept under PCT Rule 13.1. However, the International Preliminary Examination Authority (“IPEA”) believed that there was unity of

invention. Had the IPEA believed that there was not unity of invention, Box IV in Section 3 of the International Preliminary Examination Report would have been checked. As shown in the attached Exhibit A, Box IV is not checked.

It is respectfully submitted that the Examiner has misapplied the correct standard of review in determining whether there is unity of invention.

The Examiner states that the three groups of claims “do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature in all groups is the method of treating the spent potliner.” *See, Office Action mailed February 21, 2008, page 2.* The Examiner further asserts that this element is shown in prior art U.S. Patent No. 4,444,740 to Snodgrass et al., and therefore cannot be a special technical feature under PCT Rule 13.2.

Applicants respectfully assert that the technical feature common to all claims is a *specific* method of treating a spent potliner as described in new claim 12¹. This is especially so, given that the restricted claims all depend directly or indirectly from claim 12. Contrary to the Examiner’s assertion, the Snodgrass et al. ‘740 patent *does not* disclose a method substantially identical to the method of the claimed invention. The method as claimed does not remove fluorides during the treatment process. In contrast, Snodgrass et al. ‘740 discloses a method for treating spent potliners where the primary purpose is the recovery of fluorine values and the neutralization of the residue so that it can be used as landfill. The whole purpose of the invention of the subject application is that there is no residue that has to be used as landfill.

The claimed method requires mixing the hot product from the furnace with water at a substantially lower temperature to produce reaction gases and residue. Snodgrass et al. ‘740 teaches leaching the residue with water or caustic in order to later recover fluorides from the leachate, preferably at elevated pressure and elevated temperature. The claimed method does not have a leaching step. Rather, the mixing step is done at a significant temperature difference to cause the residue to fracture and to cause the generation of steam and flammable gases. The hydro reaction step 40 of the invention is significantly different than the leaching step of Snodgrass et al. ‘740.

¹ The restriction requirement was originally applied to claim 1; in an Amendment and Response filed contemporaneously herewith, claim 1 has been canceled; however, the rejection will be discussed with regard to new claim 12 from which the remaining claims now depend.

The method of the claimed invention is also specifically concerned with neutralization of the reactive compounds that are a potential source of flammable gases. More specifically, the invention in claim 12 includes a destroying step where reaction gases are burned off. Snodgrass et al. '740 has no destruction step or equivalent.

The claimed invention cures the residue by a curing step carried out through a mixing of the residue with water in a well ventilated area for a period of weeks. Snodgrass et al. '740 does not teach or suggest a curing step after the mixing step. Rather, Snodgrass et al. '740 teaches treating the solid residue with sulfuric acid to neutralize or minimize fluorides for disposal in a landfill (Col. 3, ll. 44-52).

All of these claimed steps not found in Snodgrass et al. '740 form a single general inventive concept found in all claims. Thus, unity of invention is clearly present and the restriction is inappropriate.

CONCLUSION

Applicants respectfully request withdrawal of the restriction requirement.

Respectfully submitted,

BERNARD JOHN COOPER ET AL.

Date: April 3, 2009

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EXHIBIT A

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP18654	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU2003/001390	International Filing Date (day/month/year) 20 October 2003	Priority Date (day/month/year) 18 October 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ B09B 3/00		
Applicant REGAIN TECHNOLOGIES PTY LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of 3 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of sheet(s).	
3. This report contains indications relating to the following items: <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 	

Date of submission of the demand 29 March 2004	Date of completion of the report 13 April 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer Jonathan Lewis Telephone No. (02) 6283 2063

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-10	YES
	Claims	NO
Inventive step (IS)	Claims 1-10	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-10	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

D1: WO 1992/012268

D2: GB 2198722

D3: WO 1992/020469

1. Independent Claim 1 discloses a method of treating a spent potliner by crushing and classifying the potliner, heating the potliner in a furnace at greater than 450°C, then mixing the residue with water to cure the residue.

D1 discloses a process for recovering aluminium and fluoride values from spent potliners. This document discloses heating spent potliners and subjecting the residue to a leaching step in order to produce a leach liquor from which an aluminium fluoride product may be precipitated. As a result, Claim 1 is novel in light of D1.

D2 discloses a process for recovering fluoride values from spent potliners, by heating the potliners to produce an ash which is treated by a sulpholysis reaction to produce a gaseous fluoride-rich product. As a result, Claim 1 is novel in light of D2.

D3 discloses a process for the treatment of spent potliners whereby the liners are crushed and combusted, before mixing the ash with chemically reactive compounds and heating to produce a heat treated ceramic material. As a result, Claim 1 is novel in light of D3.

Claims 2-10 are also novel in light of the disclosure of D1-D3.

The invention defined in the present claims involves an inventive step over the disclosure of the prior art.

2. The present claims are directed towards a method of treating a spent potliner and therefore have industrial applicability.